Operating Instructions

Exicom Falcon ET-65, ET-75, ET-125
WCRi-HID-Swipe magnetic card reader

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1 Preface

These operating instructions are intended for the safe installation of the Falcon series operator interfaces and the WCRi-HID-Swipe magnetic card reader and cover all Ex-relevant aspects. Furthermore, these operating instructions contain all necessary information for assembly and connection of the operator interfaces.

⚠ For the correct operation of all associated components please note, in addition to these operating instructions, all other operating instructions enclosed in this delivery as well as the operating instructions of the additional equipment to be connected.

2 Safety information

These operating instructions are a summary of the key safety measures. The summary is supplementary to existing rules which staff also have to study.

The safety of persons and equipment in hazardous areas depends on compliance with all relevant safety regulations.

Therefore, installation and maintenance staff working with such systems have special responsibilities. This requires precise knowledge of the applicable regulations and conditions.

The operator interfaces may only be used for the purposes detailed above and in accordance with current regulations. Comply with the declarations of conformity and the EC-type examination certificates. Compliance with any “special conditions” contained therein is particularly important.
Incorrect or unauthorized use and non-compliance with these instructions and the associated manuals will void any warranty on our part.

Operation is subject to the following:

- National safety regulations
- National accident prevention regulations
- National assembly and installation regulations
- Generally accepted technical rules
- EC type examination certificate
- Safety instructions contained in these operating instructions
- Safety notes in the hardware manual
- Characteristic values and rated operating conditions on the rating and data plates
- Additional information signs on the device

Damage may compromise Ex-protection. In the case of visible damage, the device must be returned to the manufacturer for repair.

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3 Exicom ET-65, ET-75, ET-125

3.1 Device function

The ET-65 / ET-75 / ET-125 operator interfaces are intelligent operating and monitoring devices with text or graphic display for use in hazardous environments of zones 1, 2, 21 and 22 according to ATEX guideline 94/9/EC and NEC and class 1, division1 and 2.

The ET-65 / ET-75 / ET-125 operator interfaces replace the ET-4A, ET-9752 and ET-6 operator interfaces that are no longer ATEX approved. They are compatible with existing projects.
The easy and simple functions of the ET-65 guarantee less configuration time for your application and relieve your PLC.
Both the ET-75 and ET-125 operator interfaces offer a wide range of types of graphic display. A great variety of integrated functions also means less work for your PLC.

3.2 Technical Data

Function / Equipment	**ET-65**	**ET-75**	**ET-125**
Certification / Testing			
ATEX	BVS 03 ATEX E 226		
DNV	Cert.Nr.: A-11821		
GOST-R	РОСС DE.ГБ04.B01113		
UL INMETRO	05/UL-BRAE-0046		
NEC	Cert.Nr.: 3021279		
GL	Cert.Nr.: 26 032 – 05 HH		
Protection type / Ex classification			
ATEX	⟨Ex⟩ II 2 G EEx ia IIC/IIB T4/T3 ⟨Ex⟩ II 2 D Ex ia D 21 T70°C/80°C		
DNV	According to ATEX		
GOST-R	0ExiaIIC/IIBT4/T3X DIP A21 T_A60°C/70°C, IP65		
UL INMETRO	BR-Ex ia IIC/IIB T4/T3 IP 65 T4 para T_{amb} = -25°C a +60°C T3 para T_{amb} = -25°C a +70°C		
NEC	IS/I/1/ABCD/T4 Ta = 60°C; T3 Ta = 70°C I/0/AEx ia IIC T4 Ta = 60°C; T3 Ta = 70°C		
GL	II 2 G EEx ia IIC/IIB T4/T3		
CE number	CE -0158		
Display type	LCD monochrome graphic display		
Display size	134 mm x 40,4 mm	114 mm x 64 mm	
Resolution	240 x 64 pixels	240 x 128 pixels	
Backlight with additional 9143	LED backlight		
Backlight adjustable	Contrast adjustment using key combination		
Display	Transparent membrane		Glass panel
Keyboard	Polyester membrane on FR4 material; > 1 million actions		
Functional keys custom labelling Soft keys Cursor keys Alphanumeric keys System keys	16 yes 4 yes 10 9	8 no no yes 10 9	16 yes 8 yes 10 9
System LED´s	4 (STOP, COM, ONLINE, ALARM)		5 (STOP, COM, ONLINE, ALARM, INFO)
Key LED´s, controllable	16	-	12
Free controllable LED´s	-	4 (2 yellow, 2 green)	-
Processor	Winbond W77IC32P		

Configuration memory type	Flash EEPROM							
Program memory size [kByte]	8x64 (512) Flash RAM							
Main memory, buffered [kByte] Record memory [kByte]	128 (> 4 days) 12 / ca. 200 - 700 messages							
Conf. memory size [kByte]	448							
Number of protocol drivers	3 (loadable via PC software)							
Operating system	SPSPlusWIN							
Language support	4 system languages (German, English, French, Dutch)							
Number of process images	100 / 20 bitmaps per language							
Number of texts / messages	Max. 5900							
Number of fault messages	512 (bit controlled)							
Font sets	3 (freely definable) IBM code table, 437 predefined in 3 sizes							
Predefined Fonts (for all devices)	6x8	6x12	12x21	18x32	CYR6x8	CYR6x12	CYR12x21	CYR18x32
Number of lines ET-65 ET-75 / ET-125	8 16	5 10	3 6	2 4	8 16	5 10	3 6	2 4
Number of characters/ line	40	40	20	13	40	40	20	13
Character height [ca. mm]	6	6	10	15	6	6	10	15
Power supply	10.8 VDC, 8 – 12.5 VDC via 9143/10 power supply							
Connections	via plug-in screw terminals, 2.5 mm^2 green							
Current consumption [mA]	max. 180							
Total binary inputs / electrical parameters	8 floating contacts, switches/ pushbuttons / 3.3 V, 2 mA each							
Real time clock / Data buffer	Yes (capacitor buffered, maintenance-free) / > 4 days							
1. serial interface (communication)	RS-422 (bus-compatible) connection to 9185/11							
Reader unit interface (optional via additional module)	Connection for reader devices (Barcode scanner, Wiegand reader, Proximity reader interface)							
additional interfaces (optional via additional module)								
Serial RS-232 / RS-422 or RS-485	via 9185/11-45-xx							
Profibus DP	via 9185/11-46-xx							
MPI	via 9185/11-45-xx + MPI-Box							
Ethernet TCP/ IP	via 9185/11-45-xx + SK-Cobox							
Housing	Front: aluminium with polyester membrane, seal, IP 65 Back: plastic with fastening-/arrester plate, IP 20							
Ambient temperature, operation	-20...+70 °C (+60°C at T4)							
Storage temperature	-30...+80 °C							
Relative humidity	90% at 40 °C, without condensation							
Vibration	Operation: 3 to 22Hz: 1mm 22 to 500Hz: 9.8m/s^2 = 1g Transport: 3 to 9Hz: 3.5mm 9 to 500Hz: 9.8m/s^2 = 1g							
Shock loading	Operation: 150m/s^2 = about 15g / 11ms Transport: 250m/s^2 = about 25g / 6ms							
Dimensions w x h [mm]	290 x 146						312 X 192	
Cut-out w x h [mm] (+/- 0.5)	275 x 131						300 x 180	
Mounting depth [ca. mm] Wall thickness [mm]	80 <10							
Weight [gr.]	approx. 1290			approx. 1270			approx. 1225	

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3.3 Conformity to standards

The operator interfaces comply with the following standards and directives:

Standard **Directive 94/9/EC** **3rd Supplement**	**Classification**
EN 50014 : 1997 + A1 – A2	General requirements
EN 50020 : 2002	Intrinsic safety "i"
EN 61241-0 : 2006	General requirements (dust)
EN 61241-1 : 2004	Protection by enclosures "tD" (dust)
Electromagnetic compatibility	
Directive 2004/108/EC	
EN 61000-6-2 (2005)	Interference resistance
EN 61000-6-4 (2007)	Interference emission industry

3.4 Certifications

The Falcon operator interfaces have been approved for the following scopes:

By ATEX directive 94/9/EC
for installation in zones 1, 2, 21 und 22
FM (Factory Mutual)
Class I, Division I, Groups A, B, C, D
Class I, Zone 0
GL (Germanischer Lloyd)
UL Inmetro (Brazilian certification)
DNV (Det Norske Veritas)
GOST-R (Russian certification)

3.4.1 Range of validity of approvals

The approvals listed in this operating instructions apply to the standard devices of R. STAHL HMI Systems GmbH.
Devices that deviate from the standard, for example those with a customized front panel, do not comply with all listed approvals in the operating instructions.
The label of the device shows to which approvals the device complies to !

3.4.2 ATEX

The ATEX certification is listed below the following number:

Certificate number: BVS 03 ATEX E 226

3.4.3 FM

The FM certification is listed below the following number:

Certificate number: 3021279

3.4.4 GL

The GL certification is listed below the following number:

Certificate number: 26 032 – 05 HH

For the range of validity of Germanischer Lloyd you have to use the GL-Kit !
The GL-Kit consists of the operator interface, the 9143/10-xxx-xxx-x0 power supply, the 9185/11-46-10 Fieldbus-Bridge and the stainless steel field housing no. 8125.

3.4.5 UL Inmetro

The UL Inmetro (UL do Brasil) certification is listed below the following number:

Certificate number: 05/UL-BRAE-0046

3.4.6 DNV

The DNV certification is listed below the following number:

Certificate number: A-11821
File number: 899.60
Job Id: 262.1-001294-3

3.4.7 GOST-R

The GOST-R certification is listed below the following number:

Certificate number: РОСС DE.ГБ04.В01113

There exist a separate operating instruction for the russian language.

3.5 Product identification

Manufacturer	R. STAHL HMI Systems GmbH
Type code	ET-65 / ET-75 / ET-125
CE classification:	CE 0158
Testing authority and certificate number:	BVS 03 ATEX E 226
Ex classification:	
ATEX guideline 94/9/EC	Ex II 2 G EEx ia IIC/IIB T4/T3 Ex II 2 D Ex ia D21 T70°C/80°C
FM	IS/I/1/ABCD/T4 Ta = 60°C; T3 Ta = 70°C I/0/AEx ia IIC T4 Ta = 60°C; T3 Ta = 70°C
UL Inmetro	BR-Ex ia IIC/IIB T4/T3 IP 65 T4 para T_{amb} = -25°C a +60°C T3 para T_{amb} = -25°C a +70°C
DNV	according to ATEX
GOST-R	0ExiaIIC/IIBT4/T3X DIP A21 T_A60°C/70°C, IP65

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3.6 Power supply

Operator interface	Power supply			Current consumption
	Minimum	Nominal voltage	Maximum	Maximum
ET-65 ET-75 ET-125	8 VDC	10,8 VDC	12,4 VDC	180 mA
	Power supply backlight			
ET-65 ET-75 ET-125	8 VDC	10,8 VDC	12,4 VDC	140 mA
	Power supply reader unit			
ET-65 ET-75 ET-125	8 VDC	10,8 VDC	12,4 VDC	180 mA

3.7 Permitted maximum values

3.7.1 Connection X1, supply

Terminals 1 and 2:

Power supply operator interface				
Voltage	U_i	=	12.4	V DC
Current	I_i	=	200	mA
Effective internal capacitance	C_i	=	negligible	
Effective internal inductance	L_i	=	negligible	

Terminals 3 and 4:

Backlight power supply				
Voltage	U_i	=	12.4	V DC
Current	I_i	=	200	mA
Effective internal capacitance	C_i	=	negligible	
Effective internal inductance	L_i	=	negligible	

3.7.2 Connection X2, communication

Communications interface				
Voltage	U_o	=	5.88	V DC
Current	I_o	=	40	mA
Internal resistance	R_i		147	Ω

For group IIC

Max. external capacitance	C_o	=	43	µF
Max. external inductance	L_o	=	30	mH

The following values apply in the case of combined capacitances and inductances:

Max. external capacitance	C_o	=	2.7	µF
At max. external inductance	L_o	=	1	mH

For group IIB

Max. external capacitance	C_o	=	1000	µF
Max. external inductance	L_o	=	85	mH

The following values apply in the case of combined capacitances and inductances:

Max. external capacitance	C_o	=	15	µF
At max. external inductance	L_o	=	1	mH

For the connection of intrinsically safe circuit with the following maximum value:

Voltage	U_i	=	8	V DC
Effective internal capacitance	C_i	=	negligible	
Effective internal inductance	L_i	=	negligible	

3.7.3 Connection X5, input

Digital input				
Connection of passive keys / switches, max. 2m cable				
Voltage	U_o	=	5.88	V DC
Current	I_o	=	40	mA

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3.7.4 Connection X7, readers

Terminals 1 and 2:

Power supply input						
	Type		WCR1		RSi1	
Voltage	U_i	=	12.4	V DC	12.4	V DC
Current	I_i	=	200	mA	220	mA
Effective internal capacitance	C_i	=	negligible		negligible	
Effective internal inductance	L_i	=	negligible		negligible	

Terminals 9 and 3:

Output power supply circuit for types WCR1 or RSi1

The values for voltage U_o and power I_o The power P_o, the maximum external inductance L_o. and the capacitance C_o. depend on the supply to terminals 1 and 2.

Terminals 3 and 4:

Power supply readers						
Terminals 3 and 4 are connected potential together with the terminals 1 and 2.						
	Type		WCR1		RSi1	
Voltage	U_o	=	5.88	V DC	5.4	V DC
Max. current *	I_o	=	200	mA	220	mA
Internal capacitance	C_i	=	4.6	µF	4.2	µF
Internal inductance	L_i	=	100	nH	100	nH

* I_o depends on the power supply connected to terminals 1 and 2 and cannot exceed the above value.

WCR1:
A current of Io = 200 mA results in the following external values:
For group IIC

Max. external capacitance	C_o	=	38	µF
Max. external inductance	L_o	=	0.07	mH

The following values apply in the case of combined capacitances and inductances:

Max. external capacitance	C_o	=	0.6	µF
At max. external inductance	L_o	=	0.05	mH

For group IIB

Max. external capacitance	C_o	=	1000	µF
Max. external inductance	L_o	=	2	mH

The following values apply in the case of combined capacitances and inductances:

Max. external capacitance	C_o	=	3.9	µF
At max. external inductance	L_o	=	1	mH

RSi1:
A current of Io = 220 mA results in the following external values:
For group IIC

Max. external capacitance	C_o	=	60	µF
Max. external inductance	L_o	=	0.1	mH

The following values apply in the case of combined capacitances and inductances:

Max. external capacitance	C_o	=	1.8	µF
At max. external inductance	L_o	=	0.05	mH

For group IIB

Max. external capacitance	C_o	=	1000	µF
Max. external inductance	L_o	=	2	mH

The following values apply in the case of combined capacitances and inductances:

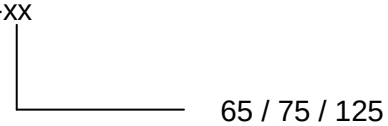
Max. external capacitance	C_o	=	5.1	µF
At max. external inductance	L_o	=	1	mH

Terminals 5 to 8:

Singal input / output						
Type			WCR1		RSi1	
Voltage	U_o	=	5.88	V DC	5.4	V DC
Current	I_o	=	56	mA	49	mA
Power	P_o	=	83	mW	62	mW
Max. external capacitance	C_o	=	43	µF	65	µF
Max. external inductance	L_o	=	16	mH	14	mH
For the connection of an intrinsically safe circuit with the following maximum value:						
Voltage	U_o	=	15	V DC	15	V DC
Current	I_o	=	500	mA	500	mA
Power	P_o	=	2.5	W	2.5	W
Effective internal capacitance	C_o	=	negligible		negligible	
Effective internal inductance	L_o	=	negligible		negligible	

3.8 Type code

Exicom ET-xx



Product type:

Version	Description
	Type with
Exicom ET-xx-RS422	RS-422 interface
Exicom ET-xx-RSi	RSi (Type RSi1) interface for barcode or proximity reader
Exicom ET-xx-WCR	WCR (Type WCR1) interface for Wiegand Effect reader

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3.9 Special conditions

for installation in Zone 21, 22:

- During assembly and operation of the operator interface electrostatic surface charging must not exceed that caused by manual rubbing.

3.10 Safety Advice

3.10.1 General information

- The operator interfaces must be integrated into the system's equipotential bonding.
- The advice contained in this instruction manual must me adhered too.

3.10.2 Zone 21

- If the operator interface is installed in **Zone 21**, the housing must **NOT** be opened in explosive atmosphere.
- If the operator interface is mounted inside a plastic housing of type 8146 by R. STAHL AG, the ambient temperature range is –20°C to +55°C.

If you intend to mount the operator interface in a different housing please note the following conditions:

- The housing must achieve IP 65 according to EN 60529 and pass the impact test according to EN 60079-0.
- The housing must be certified for use in the temperature range T >= 70°C or T >= 80°C.
- If the housing is **NOT** certified for installation in the temperature range of T >= 70°C or T >= 80°C, an individual type plate must be attached to the housing stating the permitted temperature range.

3.11 GL certification

The ET-65 / ET-75 and ET-125 operator interfaces with the appropriate accessories are certified by the Germanischer Lloyd.

The GL-Kit consists of the operator interface, the 9143/10-xxx-xxx-x0 power supply, the 9185/11-46-10 Fieldbus-Bridge and the stainless steel field housing no. 8125.

4 I.S. power supply 9143

4.1 Function

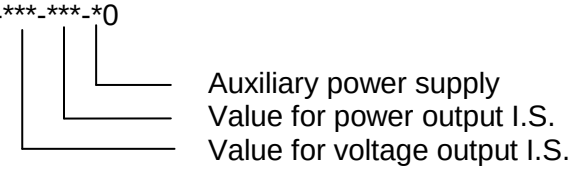
The I.S. power supplies are used to provide intrinsically safe power to the operator interfaces and their accessories.

Version 9143/10-120-200-*0 is the first and will be replaced by 9143/10-114-200-*0.
For the BCSi-302 barcode scanner you may only use version 9143/10-104-220-*0.

📖 For information relevant to explosion protection and general safety, for technical data, the EC type examination certificate and the declaration of conformity please refer to the Operating Instructions of the 9143 power supply.

4.2 Type code

Type code:
Power supply 9143/10-***-***-*0



Product type:

Type	Auxiliary power supply	Remarks
Power supply 9143/10-120-200-10	24 V AC/DC	First version (no longer available)
Power supply 9143/10-114-200-10	24 V AC/DC	Replaces 9143/10-120-200-10
Power supply 9143/10-104-220-10	24 V AC/DC	Only for BCSi 302
Power supply 9143/10-120-200-20	85...230 V AC	First version (no longer available)
Power supply 9143/10-114-200-20	85...230 V AC	Replaces 9143/10-120-200-20
Power supply 9143/10-104-220-20	85...230 V AC	Only for BCSi 302

5 Fieldbus Isolator 9185

5.1 Function

The 9185/11 Fieldbus-Isolator is used to isolate the intrinsically safe RS-422 interface of the operator interfaces from non-intrinsically safe RS-232, RS-422 or RS-485 interfaces.
The 9185/11 Fieldbus-Isolator can also be used to transform different types of interfaces.

📖 For information relevant to explosion protection and general safety, for technical data, the EC type examination certificate and the declaration of conformity please refer to the Operating Instructions of the 9185/11 Fieldbus Isolator.

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6 WCRi-HID-Swipe magnetic card reader

6.1 Function

The WCRi-HID-Swipe card reader is used with operator interfaces with a magnetic card reader interface: type ET-xx-RS422-WCR and newly available ET-xx-RS422-WCR1.

The WCRi-HID-Swipe magnetic card reader is also known as “Wiegand MCR” and this is the name used on the EC type examination certificate.

The Wiegand WCR reader is used in access control systems as an entry-key for zone 1 processing and controlling.
The Wiegand WCR reader can read magnetic information contained on sensor cards. The information is then passed on to a higher-level computer via a serial interface.

6.2 Product specification and technical data

Manufacturer	R. STAHL HMI Systems GmbH
Type code	EXICOM Wiegand WCR type reader
CE classification	CE 0158
Ex classification	Ex
Explosion protection classification	II 2 G EEx ib IIC T4/T3
Testing authority and certificate number	BVS 04 ATEX E 092
Ambient temperature range in combination with operator interfaces (see certificate)	-20 °C … +60 °C T4 -20 °C … +80 °C T3
Number of the authority nominated for the supervision of manufacture	0158
Safety data	
max. voltage, U_i	6.5 V DC
max. current, I_i	500 mA
max. power P_i and ambient temperature range	1.3 W -20 °C … +40 °C T4 1.2 W -20 °C … +60 °C T4 1.0 W -20 °C … +80 °C T4 1.3 W -20 °C … +80 °C T3
effective internal capacitance, C_i	25 µF
effective internal inductance, L_i	negligible

For further details and value combinations please refer to the EC type examination certificate.

Technical data (extract from the data sheet)

Auxiliary power	
Nominal voltage U_N Nominal current (at U_N) Power consumption (at U_N)	5 V DC 40 mA 200 mW

Ambient conditions	
Operating temperature	-20…+80 °C
Storage temperature	-40…+80 °C
Relative humidity (no condensation)	< 95 %

The current data sheet contains further technical data.

Before operating under conditions other than the standard operating conditions please contact the manufacturer.

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7 Installation and operation

7.1 General information

Electrical installations are subject to the relevant regulations for installation and operation, such as RL 1999/92/EC, RL 94/9EC, ElexV, IEC/EN 60079-14 and VDE 0100.

The users of electrical installations in hazardous environments must ensure that the equipment is kept in proper condition, is operated according to instructions and that maintenance and repairs are carried out (ElexV and EN 60079-14).

7.2 ET-65, ET-75, ET-125

- The operator interfaces may be installed in zones 1, 2 or 21, 22. The intrinsically safe circuits must be installed according to applicable regulations.
- Intrinsically safe and non intrinsically safe conducting connection parts must be installed with a minimum distance of 50 mm.
- The operator interfaces are constructed according to protection type IP65 and must therefore be protected from adverse environmental conditions such as splashed water or dirt exceeding pollution degree 2.
- The EC type examination certificates should be read before installation. Users must adhere to any “special conditions” therein. Also of importance are the permitted electrical operating values specified therein.
- When connecting the operator interfaces to the intrinsically safe circuits of the associated equipment the respective peak values of the field unit and the associated device must be observed to ensure explosion protection (proof of intrinsic safety).
- The I.S. terminals may also with voltage applied.
- The external PA / ⏚-connection is subject to installation regulations and may therefore have to be connected to an equipotential bonding system. A connection is provided on the back of the terminal housing for this purpose.
- The PA-connector must be connected to the equipotential bonding conductor of the hazardous area.

7.2.1 Area of application for NEC

If the operator interfaces are installed in the NEC 500/505 area of application, **All** terminals of the operator interfaces must be COMBICON spring-cage plug components type FKC 2.5/4 – STF – 5.08 or FKC 2.5/9 – STF – 5.08 manufactured by Phoenix Contact !

7.3 WCRi-HID-Swipe magnetic card reader

- This device may be operated in zone 1.
- Electrical connections consist of fixed wiring. These wires must be properly connected to terminals at the separate equipment.
- The rules for explosion protection must be observed when connecting the device to the power circuit.
- Where applicable, any special conditions listed on the EC type examination certificate must be observed.
- The device may only be operated in proper, undamaged housing that is completely closed. If the housing is damaged the device may not be operated !

8 Application

The devices may only be used for the purposes detailed above and in accordance with current regulations. Otherwise, the manufacturer's warranty shall become null and void !

In case of incorrect or unauthorised use or non-compliance with the instructions in this manual the manufacturer's warranty will become null and void.

No changes may be made to the devices or their components that compromise explosion protection.

The devices may only be installed and operated in an undamaged, dry and clean condition.

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9 Assembly and disassembly

9.1 General information

Assembly and disassembly are subject to general technical rules. Additional, specific safety regulations apply to electronic and pneumatic installations. In Germany, for example, these include the BGI 547 (Information on and principles of workplace safety and health issued by the Government Safety Association) and the BetrSichVer (Betriebssicherheitsverordnung - German Regulation of Workplace Safety).

9.2 ET-65, ET-75, ET-125

When installing the device, particular care shall be taken that:

- the operator interface has been properly installed according to instructions,
- the operator interface is undamaged,
- the terminal compartment is clean,
- all screws are tightened fast,
- where necessary, the device's external bonding terminal is properly connected to the exponential bonding system at its place of use,
- the cover of the terminal compartment is completely closed.

9.2.1 Cut-out ET-xxx

Make a cut-out with the following dimensions:

Operator interface	Width	Height	Installation depth	Material thickness
ET-65 / ET-75	275.0 ± 0.5 mm	131.0 ± 0.5 mm	max. 80 mm	up to 10 mm
ET-125	300.0 ± 0.5 mm	180.0 ± 0.5 mm	max. 80 mm	up to 10 mm

9.2.2 Assembly of ET-xxx

Mount the device using all fasteners, the fixing frame and the seal provided:

- For operator interfaces ET-65 and ET-75 use the type 7 fastener set with 8 fastener brackets and for ET-125 the type 8 fastener set with 10 fastener brackets.
- Fixing frame type 1 is for operator interfaces ET-65 and ET-75 and type 2 is for ET-125. These fixing frames are used as guides for the fastener brackets and therefore serve to securely and stably position the operator interface.
- Fix the brackets in the corresponding gaps of the housing.

Optimum sealing:

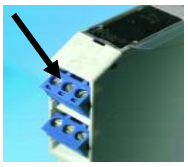
- Tighten the screws lightly.
- Check the position of the display, ensuring above all that the rubber seals are correctly positioned.
- Now tighten the terminal screws with a tightening torque of between 0.3 and 0.4 Nm.

Caution:
IP65 is achieved with

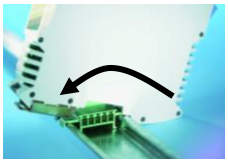
- proper mounting and
- a level and smooth mounting surface

9.3 I.S. power supply 9143

Mounting position: any
a) Detachable terminals
All devices are fitted with detachable terminals. The terminals can be detached by means of a screwdriver, for example.

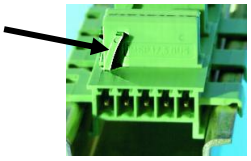


b) Mounting on DIN rails in accordance with EN 50022
Place the device on the DIN rail and tilt/snap onto the rail as shown below. Do not tilt to either side when mounting. To dismount, gently loosen the lock on the mounting foot with a screwdriver and then remove the module.



c) Mounting on DIN rails with a pac-bus already installed (only 9143/10-...-...-10)
As shown below, place the device on the pac-Bus and tilt/snap until it locks in. Do not tilt to either side when mounting.

Note: In order to prevent pole reversal during installation, the pac-Bus elements are fitted with a polarisation guide (see below) and the module is fitted with a matching slot.



Dismount as described in section b) above.

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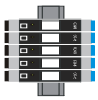
9.3.1 Maximum permitted ambient temperatures

Devices of the IS pac series can be operated inside a wide range of temperatures. The maximum permitted ambient temperature may vary depending on device type and installation conditions.

	Mounting position:	DIN rail	max. temperature
without circulation	<u>One device:</u> horizontal vertical		70 60
	horizontal		70
	vertical		60
with circulation	<u>One device:</u> horizontal vertical		70
	horizontal		70
	vertical		

9.3.2 Projection of dissipation loss in control cabinets

Installing operator interfaces in control cabinets limits the free circulation of air, and the temperature will rise. To minimize this temperature rise it is important to optimize the dissipation loss as well as the heat generated inside the cabinet.

a) Natural convection in closed cabinets

- Application: in case of little dissipation loss and when the system is installed in a dusty or rough environment
- Calculation of the maximum permitted dissipation loss:

  $P_{max} = \Delta t * S * K$

  P_{max} [W] maximum permitted dissipation loss inside the control cabinet
  Δt [°C] maximum permitted temperature increase
  S [m²] free, heat-emitting surface of the control cabinet
  K [(W/m²*°C)] thermic conductance coefficient (coated steel: K = 5.5)

  The calculated value P_{max} must be less than the sum of the average dissipation loss (70% of the maximum dissipation loss) of the installed devices: $P_{max} < \sum P_{70\%}$

b) Natural convection in open cabinets

- Function: the heat is displaced by cool airstreams between the devices
- Conditions:
  - Air inlets and outlets at the top and bottom of the cabinet
  - the airstream path must be free of obstacles
- Result: Depending on the actual set-up, twice the permitted dissipation loss as that under a) can be achieved.

c) Forced ventilation with heat exchanger in closed cabinets

- Application: when neither the environment or the high dissipation loss allow for natural convection
- Function: a heat exchanger with a fan draws air into the cabinet and presses it into the heat exchanger plates, which are cooled with ambient air by a second fan.
- Result: Depending on the actual set-up, **5 to 6 times** the permitted dissipation loss as that under a) can be achieved.

d) Forced ventilation in open cabinets

- Function: One or more fan/s generate an airstream from the opening at the bottom of the cabinet past the devices and out of the upper opening of the cabinet.
- Calculation of the required airstream:

  $Q = (3{,}1 * P_{70\%}) / \Delta t$

  Q [m³/h] required airstream
  P_{max} [W] developing dissipation loss (70% of the maximum dissipation loss)
  Δt [°C] permitted temperature increase in the control cabinet

e) Air conditioner

- Application: in hot climates – it is possible to achieve a temperature inside the cabinet that is the same or less than the ambient temperature.
- Function: Use of a specific chilling system or the existing air conditioning system to cool the cabinet.

9.4 Fieldbus Isolator 9185

As described above in section 9.3.

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10 Commissioning

10.1 Connections ET-xxx

Terminal	Pin	Definition		Connection
X1	1	Power supply operator interface +12V DC		Power supply of the operator interface
	2	Power supply operator interface GND 1		
	3	Power supply backlight +12V DC		
	4	Power supply backlight GND 2		
X2	1	TxD-A		Serial interface RS-422
	2	TxD-B		
	3	RxD-A		
	4	RxD-B		
X5	1	Input 1		Keys or switches *
	2	Input 2		
	3	Input 3		
	4	Input 4		
	5	Input 5		
	6	Input 6		
	7	Input 7		
	8	Input 8		
	9	+ 3.3 V DC		
X7 ***	1	Power supply reader module +12V DC		Card reader ****
	2	Power supply reader module GND 3		
	3	Power supply card reader GND 4		
	4	Power supply card reader +5V DC		
	5	RxD	D0	
	6	TxD	LED	
	7	RTS	N.C. **	
	8	CTS	D1	
	9	+ 12V DC (out)		

* The push buttons or keys used here must at least be suitable for U ≥ 6V and I ≥ 60mA. The maximum nominal values are 3.3V and 2mA.

** Not connected

*** Concerning the X7 reader interface, the actual operator interfaces are different compared to the first certification status.
For operator interfaces under the first certification status, please use the delivered operating instruction or contact our support department.

**** Depending on the type of assembly pins 5 to 9 of the X7 interface have a different configuration.

10.2 Connections 9143

Power supply 9143/10-*-***-10**			
Input		**Output (intrinsically safe)**	
Connection (pin)	**Definition**	**Connection (pin)**	**Definition**
Connector			
7	+ 24V DC	10	Output 1+
8	Functional earth	11	Output 1-
9	GND	12	N.C. **
Pac Bus			
1	+ 24V DC		
2	GND		
3, 4	LF *		
5, 6	N.C. **		

☞ * Contacts 3 and 4 (LF) on the pac bus must be short-circuited !

Power supply 9143/10-*-***-20**			
Input		**Output (intrinsically safe)**	
Connection (pin)	**Definition**	**Connection (pin)**	**Definition**
Connector			
7	85...230 V AC	10	Output 1+
8	Functional earth	11	Output 1-
9	85...230 V AC	12	N.C. **

☞ ** Not connected

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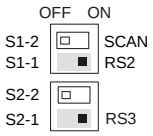
10.3 Connections 9185/11

9185/11-45-10	
Connection (pin)	**Definition**
X1 RS-232 (non Ex-side)	
2	RxD
3	TxD
5	GND
7	RTS
8	CTS
X2 RS-422 (non Ex-side)	
8	TxD-A
3	TxD-B
9	RxD-A
4	RxD-B
X2 RS-485 (non Ex-side)	
8	A (-)
3	B (+)
X3 RS-422 (Ex-side)	
8	TxD-A
3	TxD-B
9	RxD-A
4	RxD-B
X3 RS-485 (Ex-side)	
8	A (-)
3	B (+)
Auxiliary power	
Pac Bus	
1	+ 24V DC
2	GND
3, 4	LF *
5, 6	N.C. **
Terminals	
7	U+ (+24V DC)
8	PE
9	U- (0V) (GND)

10.3.1 Dip switch settings S1 and S2

Switch	Abbreviation (front plate)	Position	Function
S1-1	RS2	ON	RS-422 on the non Ex-side
		OFF	RS-485 on the non Ex-side
S1-2	SCAN	ON	If S1-1 = ON (RS-422): Transmitter RS-422 = scanning
			If S1-1 = OFF (RS-485): Transmitter RS-422 = constantly on
		OFF	If S1-1 = ON (RS-422): RS-485 = bidirectional
			If S1-1 = OFF (RS-485): Transmitter RS-485 = switched off
S2-1	RS3	ON	RS-422 on Ex-side (field side)
		OFF	RS-485 on Ex-side (field side)
S2-2	-	-	Not Connected

- The default setting is:
  S1-2 = OFF
  S1-1 = ON
  S2-2 = OFF
  S2-1 = ON



10.3.2 Rotary encoder switch settings

Rotary encoder switch *	
Switch setting	**Baud rate**
1	1.2 K
2	2.4 K
3	4.8 K
4	9.6 K
5	19.2 K
8	57.6 K

* Any other switch settings are not valid for the operator interfaces !

10.3.3 Status LEDs

LED	Abbreviation (front plate)	Colour	Definition
1	PWR	green	Power supply OK
2	ERR	red	LED static on = short circuit
			LED flashing = baud rate search in automatic baud rate detection
3	RxD1	green	Reception at the RS-232 interface X1
4	RxD2	green	Reception at the RS-422/485 interface, non Ex-side X2
5	RxD3	green	Reception at the RS-422/485 interface, field side X3

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10.4 Connection magnetic card reader WCRi-HID-Swipe

Magnetic card reader WCRi-HID-Swipe	
Connection (colour of conductor)	**Definition**
Red	+5V
Black	GND4
White	D1
Green	D0
Brown	LED
Blue	N.C. *

☞ * Not connected

11 Maintenance, service

Adhere to the applicable directives for the maintenance, service and testing of associated equipment. For explosion-protected devices the directives 1999/92/EC, IEC 60079-19, EN 60079-17 and BetrSichVer also apply.

Because the transmission of the devices remains reliable and stable over long periods of time, regular adjustments are not required.

- Only original parts provided by the manufacturer must be used.
- Fuses may only be replaced by equivalent fuse types.

System maintenance should focus on the following:

a. Seal wear
b. Monitor damage
c. All screws are tightened fast
d. All cables and lines are properly connected and undamaged

11.1.1 Servicing

In accordance with IEC 60079-19 and EN 60079-17, operators of electric plants in hazardous areas are obliged to have them serviced by qualified electricians.

12 Troubleshooting

Devices operated in hazardous areas must not be modified. Repairs may only be carried out by qualified, authorised staff specially trained for this purpose.

☞ Repairs may only be carried out by specially trained staff who are familiar with all basic conditions of the applicable user regulations and – if necessary – have been authorized by the manufacturer.

13 Disposal

Disposal of packaging and used parts is subject to regulations valid in whichever country the device has been installed.
The disposal of devices sold after August 13th, 2005 and installed in countries under the jurisdiction of the EU is governed by directive 2002/96/EC on waste electrical and electronic equipment (WEEE). Under this directive, operator interfaces are listed in category 9 (monitoring and control instruments).
We shall take back our devices according to our General Terms and Conditions.

13.1.1 ROHS directive 2002/95/EC

The prohibition of hazardous substances as detailed in directive 2002/95/EC (ROHS) does not apply to electronic equipment of categories 8 and 9, and is therefore not applicable to the equipment described in these operating instruction.

13.1.2 China ROHS

According to a new administrative rule introduced in China 01.03.2007 all devices containing hazardous substances must be labelled accordingly.

The following applies to the ET-65 / ET-75 / ET-125 operator interfaces:

Names and Contents of Toxic or Hazardous Substances or Elements

Part	**Toxic or hazardous Substances and Elements**					
Name	**Lead (Pb)**	**Mercury (Hg)**	**Cadmium (Cd)**	**Hexa-valent Chromium (Cr (VI))**	**Poly-brominated biphenyls (PBB)**	**Poly-brominated diphenyl ethers (PBDE)**
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
all PCBs	**X**	O	O	O	O	O
Misc.	O	O	O	O	O	O

O Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

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14 Certificates

Starting with the version 02.02.18 of these operating instructions, the chapter entitled "Certificates" will contain only the first page of the EC type examination certificate plus the first page of the most recent supplement.
All technical details contained in the EC type examination certificate are, however, part of these operating instructions.
The complete certificate can be downloaded from the homepage of R. STAHL HMI Systems GmbH or a copy can be ordered from R. STAHL HMI Systems GmbH.

14.1 Exicom ET-65, ET-75, ET-125

14.1.1 Declaration of EC conformity

EG - Konformitätserklärung
EC-Declaration of Conformity
CE-Déclaration de Conformité

Wir/ *We* /Nous

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D-50767 Köln

erklären in alleiniger Verantwortung dass unsere Produkte:
declare under our sole responsibility that the products:
attestons sous notre responsabilité que les produits:

ET-65-RS422-xxx, ET-75-RS422-xxx, ET-125-RS422-xxx

gekennzeichnet:
marked:
marqué:

II 2 G EEx ia IIC/IIB T4/T3
II 2 D Ex ia D21 T70°C/80°C

übereinstimmen mit der/den folgenden Norm(en) oder normativen Dokumenten:
are in conformity with the following standards or normative documents:
sont conformes aux normes ou aux documents normatifs suivants:

Bestimmung der Richtlinie *Terms of the directive* Prescription de la directive	**Titel und/oder Nr. sowie Ausgabedatum der Norm** *Title and/or No. and date of issue of the standard* Titre et/ou No. Ainsi que date démission des normes
2004/108/EG: Elektromagnetische Verträglichkeit *2004/108/EC: Electromagnetic compatibility* 2004/108/CE: Compatibilité électromagnétique	EN 61000-6-2 (03/2006) EN 61000-6-4 (09/2007)
94/9/EG: Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explositionsgefährdeten Bereichen *94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres* 94/9/CE: Appareils et systèmes de protection destinés á être utilisés en atmosphères explosibles	EN 50014: 1997+A1-A2 EN 50020: 2002 EN 61241-0: 2006 EN 61241-1: 2004 Das Produkt entspricht Anforderungen aus: *Product corresponds to requirements from:* Produit correspond aux exigences: EN 60079-0: 2006, EN 60079-11: 2007
EG-Baumusterprüfbescheinigung Nr., ausgestellt durch benannte Stelle: *EC-Type Examination Certificate No., exposé par organisme notifié:* Attestation d´examen CE de type No. issued by notified body:	**BVS 03 ATEX E 226** DEKRA EXAM GmbH Dinnendahlstraße 9 D-44809 Bochum

Köln, den 01.10.2009
Ort und Datum
Place and date
lieu et date

Joachim Düren
Technical Director

Werner Bertges
Quality Manager

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14.1.2 EC type examination certificate

DEKRA

Translation

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) **BVS 03 ATEX E 226**

(4) **Equipment:** **Computer terminal type ET-**-RS422-*****

(5) **Manufacturer:** **SAE-STAHL GMBH**

(6) **Address:** **50767 Köln, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 03.2142 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997 + A1 – A2 General requirements
EN 50020:2002 Intrinsic safety 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 2G EEx ia IIC/IIB T4/T3

Deutsche Montan Technologie GmbH
Bochum, dated 16th September 2003

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

This certificate may only be reproduced in its entirety and without change
DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com

DEKRA

Translation

3rd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
BVS 03 ATEX E 226

Equipment: **Terminal type ET-**-RS422-*****

Manufacturer: **R. STAHL HMI Systems GmbH**

Address: **50767 Cologne, Germany**

Description
The circuitry of the terminal can be modified slightly and the terminal can be manufactured according to the descriptive documents as mentioned in the pertinent test and assessment report.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50020:2002	Intrinsic safety 'i'
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by enclosures

The marking of the equipment shall include the following:

II 2G EEx ia IIC/IIB T4/T3
II 2D Ex ia D21 T70°C/80°C

Special conditions for safe use
Without change

Test and assessment report
BVS PP 03.2142 EG as of 29.10.2007

DEKRA EXAM GmbH
Bochum, dated 29. October 2007

Signed: Dr. Jockers — Certification body

Signed: Dr. Eickhoff — Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 29.10.2007
BVS-Schu/Ar A 20070150

DEKRA EXAM GmbH

Certification body

Special services unit

This certificate may only be reproduced in its entirety and without change.
DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.03.2007 EXAM BBG Prüf- und Zertifizier GmbH)

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14.1.3 FM certificate

FM Approvals
Member of the FM Global Group
FM Approvals
1151 Boston-Providence Turnpike
P.O. Box 9102 Norwood, MA 02062 USA
T: **781 762 4300** F: 781 762 9375 www.fmapprovals.com

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

Type ET-a-RS-422-b. Operator Interfaces.
IS/I/1/ABCD/T4 Ta = 60°C; T3 Ta = 70°C – 2004 40 51 0; Entity; I/0/AEx ia IIC T4 Ta = 60°C; T3 Ta = 70°C – 2004 40 51 0; Entity
a= Type: 65, 75, 125
b = Device Coding: RSXi1, WCR1 or Blank.

Equipment Ratings:

Intrinsically Safe (Entity) for use in Class I, Division 1, Groups A, B, C and D; Temperature Class T4 Ta = 60°C; T3 Ta = 70°C in accordance with Control Drawing No. 2004 40 51 0; Intrinsically safe (Entity) for use in Class I, Zone 0, AEx ia IIC T4 Ta = 60°C; T3 Ta = 70°C; in accordance with Control Drawing No. 2004 40 51 0; indoor Hazardous (Classified) Locations.

Approved for:

R STAHL HMI Systems GmbH
D-50767 Köln (Cologne), Germany

FM Approvals℠
Member of the FM Global Group

This certifies that the equipment described has been found to comply with the following FM Approval Standards and other documents:

Class 3600	1998
Class 3610	1999
Class 3810	2005

Original Project ID: 3021279 FM Approval Granted: May 13, 2005

Subsequent Revision Reports / Date FM Approval Amended

Report Number	Date	Report Number	Date
050608	6 July 05		

FM Global Technologies LLC

George A. Smith
Assistant Vice President
FM Approvals

6 July 05
Date

FM Approvals HLC 7/04

3021279
Page 2 of 2

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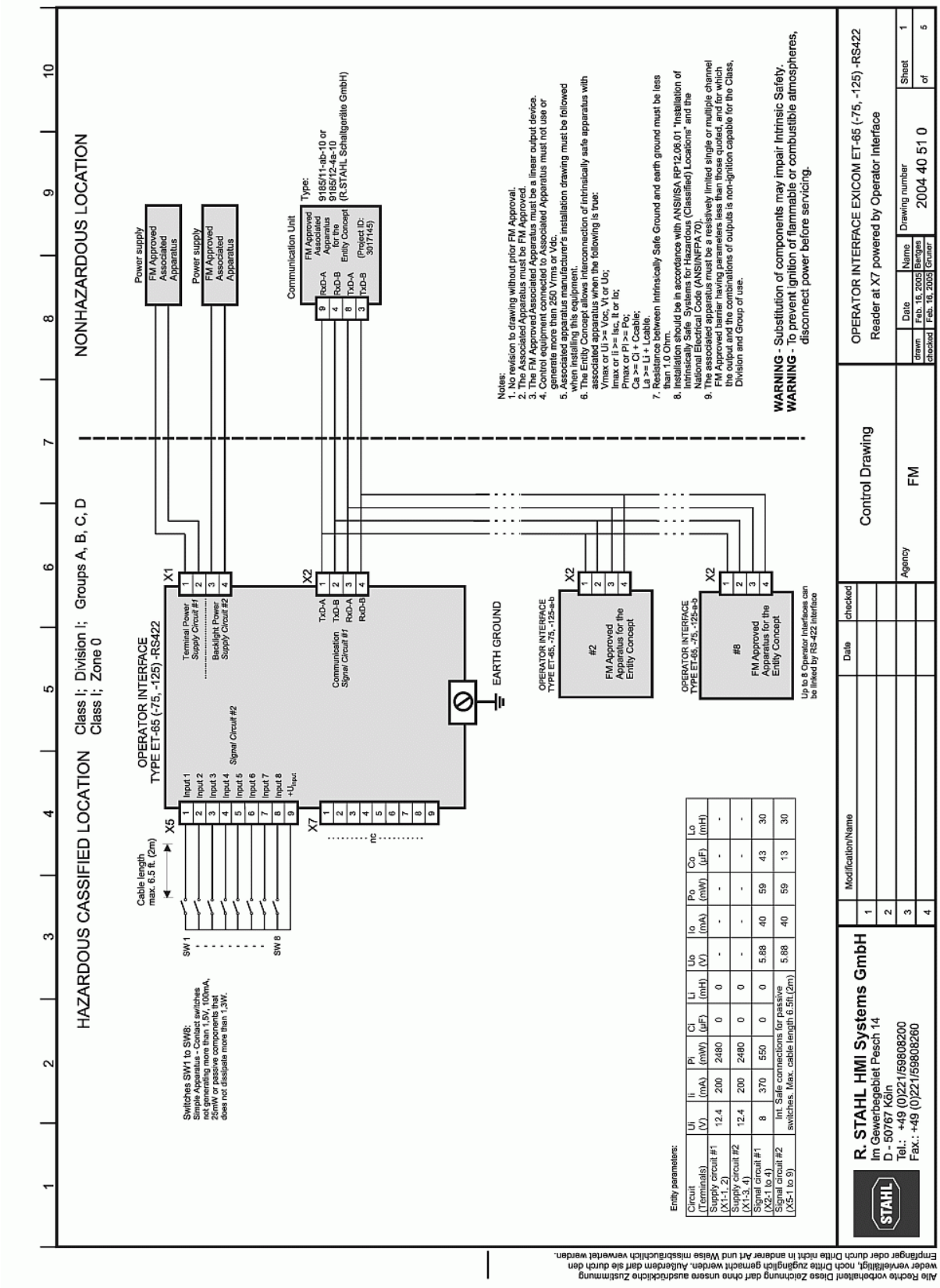
HAZARDOUS CASSIFIED LOCATION Class I; Division I; Groups A, B, C, D
Class I; Zone 0
NONHAZARDOUS LOCATION
OPERATOR INTERFACE
TYPE ET-65 (-75, -125) -RS422
Terminal Power Supply Circuit #1
Backlight Power Supply Circuit #2
Signal Circuit #2
Communication Signal Circuit #1
Cable length max. 6.5 ft. (2m)
Switches SW1 to SW8:
Simple Apparatus - Contact switches not generating more than 1,5V, 100mA, 25mW or passive components that does not dissipate more than 1,3W.
EARTH GROUND
Power supply
FM Approved Associated Apparatus
Communication Unit
FM Approved Associated Apparatus for the Entity Concept
Type:
9185/11-ab-10 or
9185/12-4a-10
(R.STAHL Schaltgeräte GmbH)
(Project ID: 3017145)
OPERATOR INTERFACE TYPE ET-65, -75, -125-a-b
#2
FM Approved Apparatus for the Entity Concept
#8
Up to 8 Operator Interfaces can be linked by RS-422 interface
Notes:
1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved.
3. The FM Approved Associated Apparatus must be a linear output device.
4. Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
5. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
6. The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:
Vmax or Ui >= Voc, Vt or Uo;
Imax or Ii >= Isc, It or Io;
Pmax or Pi >= Po;
Ca >= Ci + Cable;
La >= Li + Lcable.
7. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
8. Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
9. The associated apparatus must be a resistively limited single or multiple channel FM Approved barrier having parameters less than those quoted, and for which the output and the combinations of outputs is non-ignition capable for the Class, Division and Group of use.
WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Entity parameters:
Switches SW1 to SW8: Int. Safe connections for passive switches. Max. cable length 6.5ft (2m)
Control Drawing
OPERATOR INTERFACE EXICOM ET-65 (-75, -125) -RS422
Reader at X7 powered by Operator Interface
Agency FM
Drawing number 2004 40 51 0
Sheet 1 of 5
R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D - 50767 Köln
Tel.: +49 (0)221/59808200
Fax.: +49 (0)221/59808260
Modification/Name Date checked
drawn Feb. 16, 2005 Bertges
checked Feb. 16, 2005 Gruner

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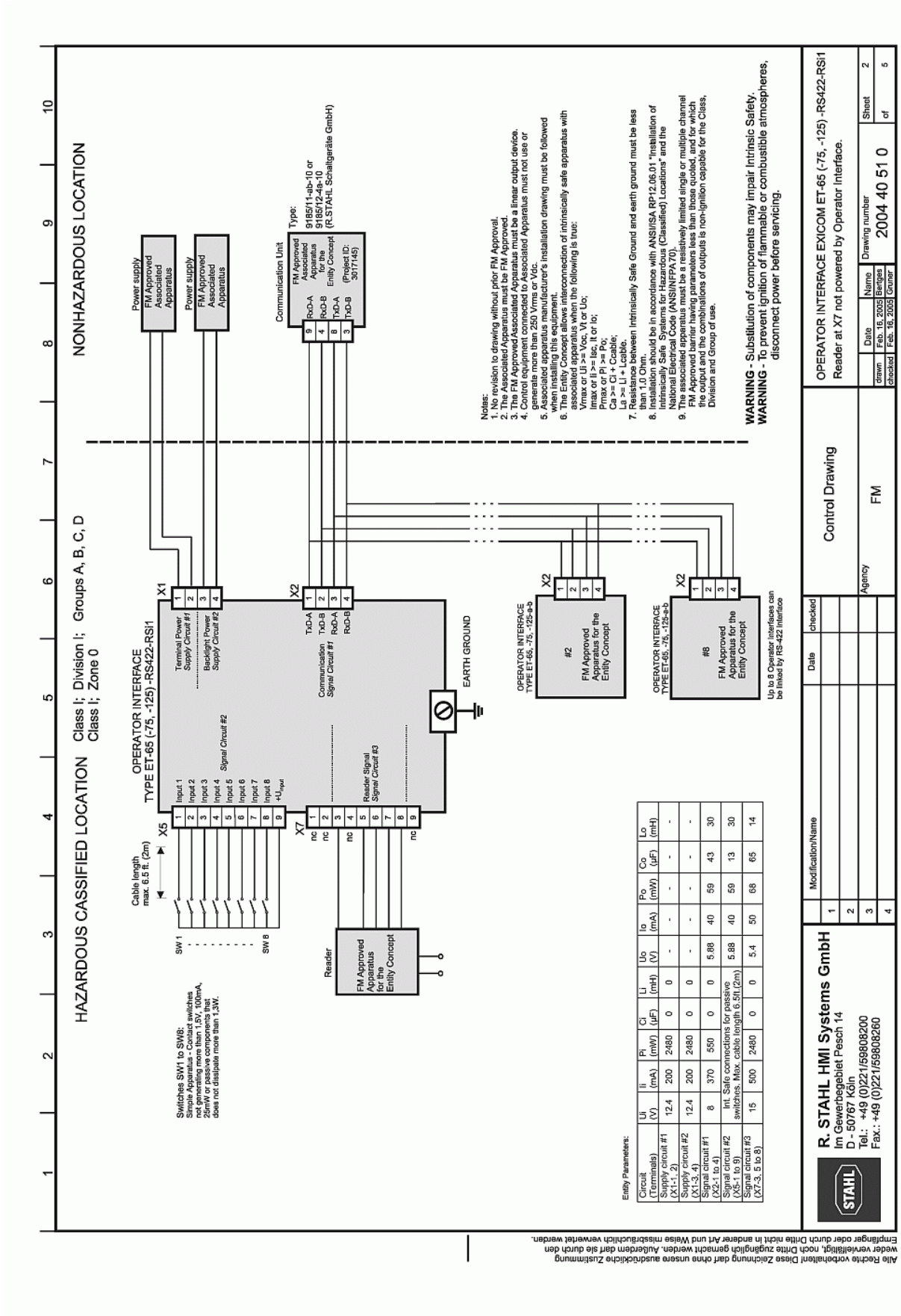
HAZARDOUS CASSIFIED LOCATION Class I; Division I; Groups A, B, C, D
Class I; Zone 0
NONHAZARDOUS LOCATION
OPERATOR INTERFACE
TYPE ET-65 (-75, -125) -RS422-RSI1
Power supply
FM Approved
Associated
Apparatus
Communication Unit
Type:
9185/11-ab-10 or
9185/12-4b-10
(R.STAHL Schaltgeräte GmbH)
(Project ID:
30171145)
Terminal Power
Supply Circuit #1
Backlight Power
Supply Circuit #2
Signal Circuit #2
Communication
Signal Circuit #1
Reader Signal
Signal Circuit #3
EARTH GROUND
Cable length
max. 6.5 ft. (2m)
SW 1
SW 8
Switches SW1 to SW8:
Simple Apparatus - Contact switches
not generating more than 1,5V, 100mA,
25mW or passive components that
does not dissipate more than 1,3W.
Reader
FM Approved
Apparatus
for the
Entity Concept
OPERATOR INTERFACE
TYPE ET-65, -75, -125-a-b
#2
#8
Up to 8 Operator Interfaces can
be linked by RS-422 Interface
Notes:
1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved.
3. The FM Approved Associated Apparatus must be a linear output device.
4. Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
5. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
6. The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:
Vmax or Ui >= Voc, Vt or Uo;
Imax or Ii >= Isc, It or Io;
Pmax or Pi >= Po;
Ca >= Ci + Ccable;
La >= Li + Lcable.
7. Resistance between Intrinsically Safe Ground and earth ground must be less than 1,0 Ohm.
8. Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
9. The associated apparatus must be a resistively limited single or multiple channel FM Approved barrier having parameters less than those quoted, and for which the output and the combinations of outputs is non-Ignition capable for the Class, Division and Group of use.
WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Entity Parameters:
Circuit (Terminals) | Ui (V) | Ii (mA) | Pi (mW) | Ci (µF) | Li (mH) | Uo (V) | Io (mA) | Po (mW) | Co (µF) | Lo (mH)
Supply Circuit #1 (X1-1, 2) | 12.4 | 200 | 2480 | 0 | 0 | - | - | - | - | -
Supply Circuit #2 (X1-3, 4) | 12.4 | 200 | 2480 | 0 | 0 | - | - | - | - | -
Signal circuit #1 (X2-1 to 4) | 8 | 370 | 550 | 0 | 0 | 5.88 | 40 | 59 | 43 | 30
Signal circuit #2 (X5-1 to 9) | Int. Safe connections for passive switches. Max. cable length 6.5ft (2m) | | | | | 5.88 | 40 | 59 | 13 | 30
Signal circuit #3 (X7-3, 5 to 8) | 15 | 500 | 2480 | 0 | 0 | 5.4 | 50 | 68 | 65 | 14
Control Drawing
OPERATOR INTERFACE EXICOM ET-65 (-75, -125) -RS422-RSI1
Reader at X7 not powered by Operator Interface.
Agency FM
Modification/Name Date checked
drawn Feb. 16, 2005 Bertges
checked Feb. 16, 2005 Gruner
Drawing number 2004 40 51 0
Sheet 2
of 5
R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D - 50767 Köln
Tel.: +49 (0)221/59808200
Fax.: +49 (0)221/59808260
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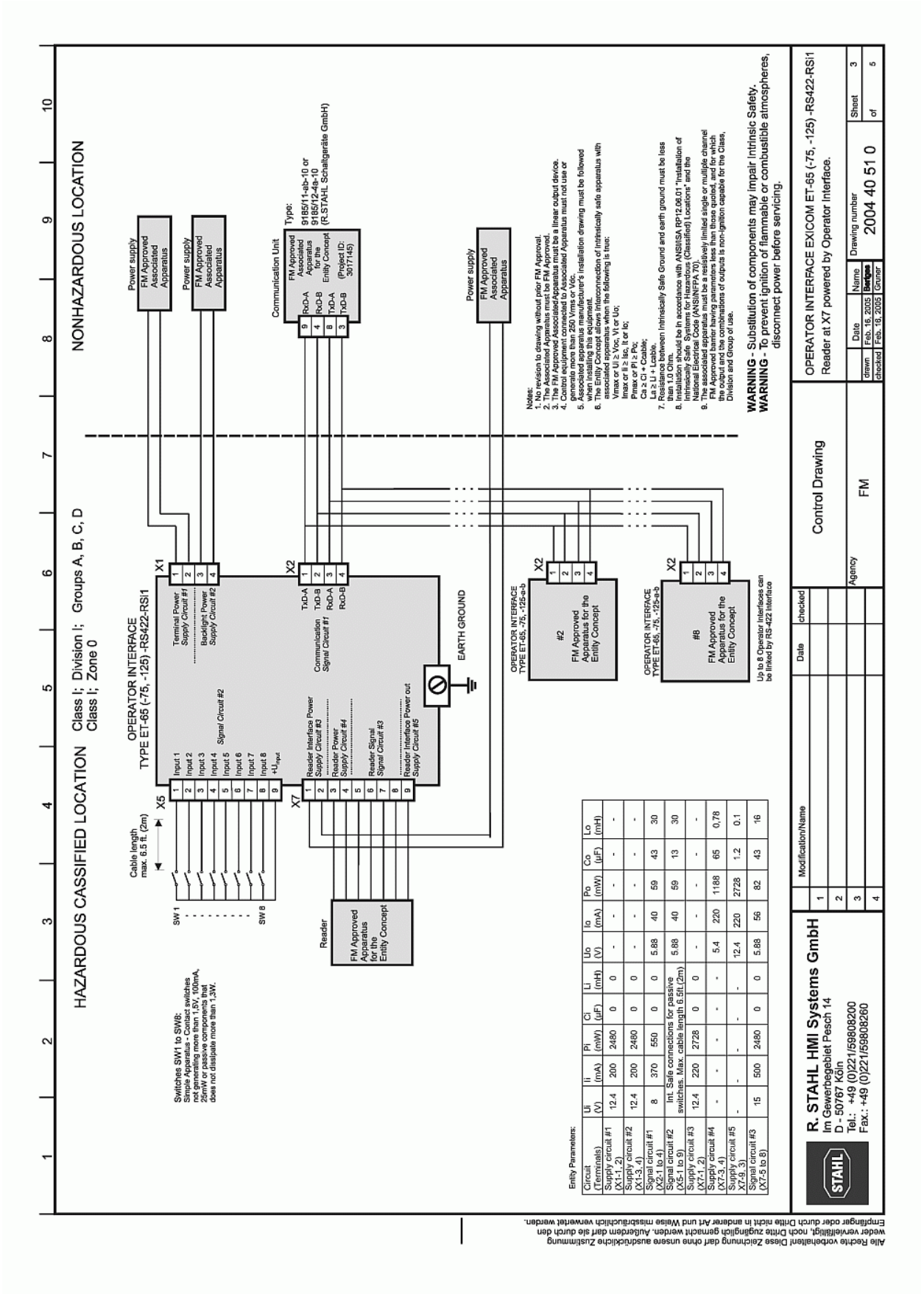
HAZARDOUS CASSIFIED LOCATION Class I; Division I; Groups A, B, C, D
Class I; Zone 0
NONHAZARDOUS LOCATION
OPERATOR INTERFACE
TYPE ET-65 (-75, -125) -RS422-RSI1
Cable length max. 6.5 ft. (2m)
Switches SW1 to SW8:
Simple Apparatus - Contact switches not generating more than 1,5V, 100mA, 25mW or passive components that does not dissipate more than 1,3W.
Reader
FM Approved Apparatus for the Entity Concept
Power supply
FM Approved Associated Apparatus
Communication Unit
Type: 9185/11-ab-10 or 9185/12-4b-10 (R.STAHL Schaltgeräte GmbH)
FM Approved Associated Apparatus for the Entity Concept
(Project ID: 30171145)
EARTH GROUND
OPERATOR INTERFACE TYPE ET-65, -75, -125-a-b
#2
#8
Up to 8 Operator Interfaces can be linked by RS-422 Interface
Notes:
1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved.
3. The FM Approved Associated Apparatus must be a linear output device.
4. Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
5. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
6. The Entity Concept allows interconnection of Intrinsically safe apparatus with associated apparatus when the following is true:
Vmax or Ui ≥ Voc, Vt or Uo;
Imax or Ii ≥ Isc, It or Io;
Pmax or Pi ≥ Po;
Ca or Ci + Cable;
La or Li + Cable;
7. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
8. Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
9. The Associated Apparatus must be a passively limited single or multiple channel FM Approved barrier having parameters less than those quoted, and for which the output and the combinations of outputs is non-ignition capable for the Class, Division and Group of use.
WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Entity Parameters:
Control Drawing
OPERATOR INTERFACE EXICOM ET-65 (-75, -125) -RS422-RSI1
Reader at X7 powered by Operator Interface.
Agency FM
Drawing number 2004 40 51 0
Sheet 3 of 5
R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D - 50767 Köln
Tel.: +49 (0)221/59808200
Fax.: +49 (0)221/59808260
Modification/Name Date checked
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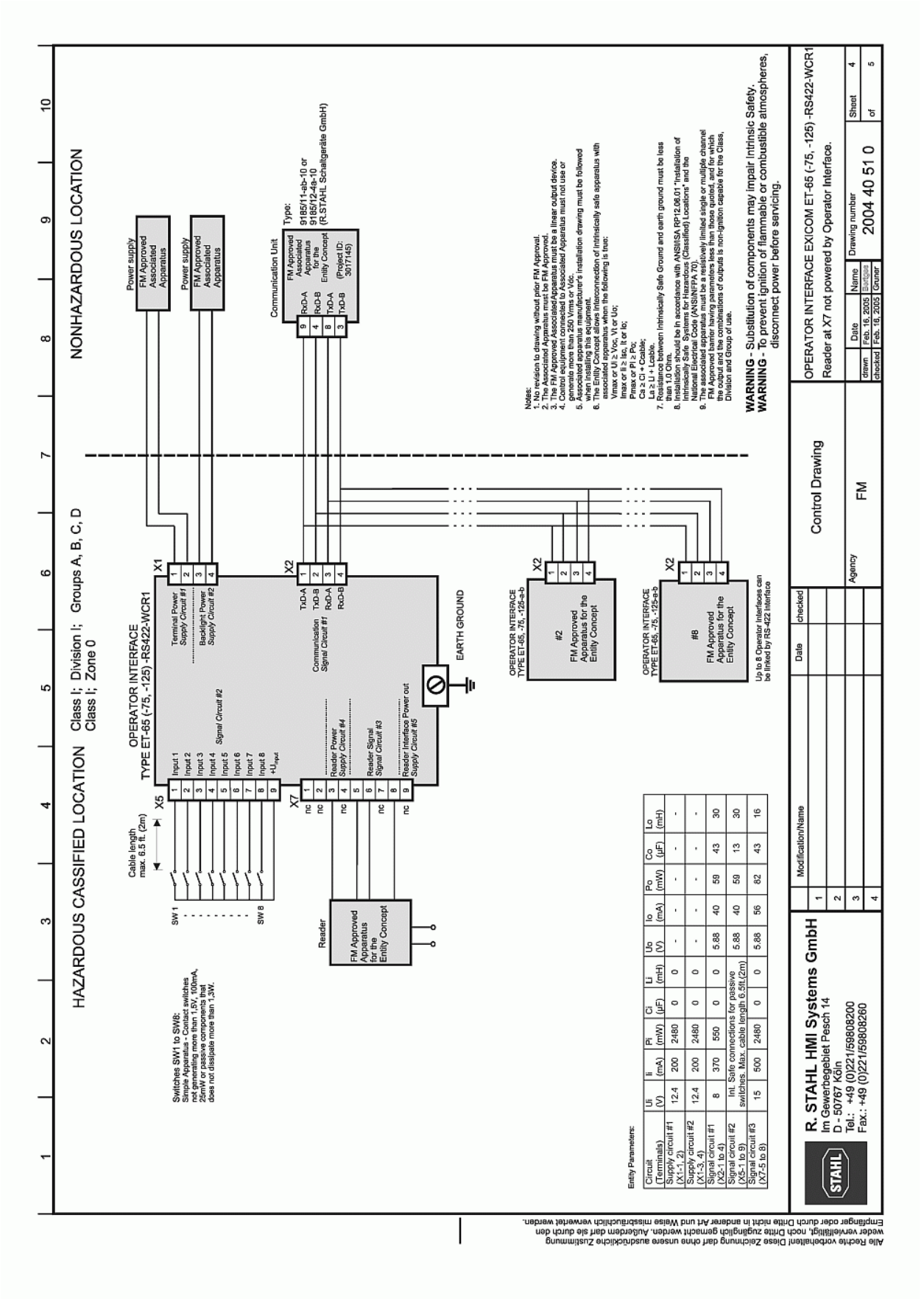
Circuit (Terminals)	Ui (V)	Ii (mA)	Pi (mW)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (mH)
Supply circuit #1 (X1-1, 2)	12.4	200	2480	0	0	-	-	-	-	-
Supply circuit #2 (X1-3, 4)	12.4	200	2480	0	0	-	-	-	-	-
Signal circuit #1 (X2-1 to 4)	8	370	550	0	0	5.88	40	59	43	30
Signal circuit #2 (X5-1 to 9)	Int. Safe connections for passive switches. Max. cable length 6.5ft (2m)					5.88	40	59	13	30
Supply circuit #3 (X7-1, 2)	12.4	220	2728	0	0	-	-	-	-	-
Supply circuit #4 (X7-3, 4)	-	-	-	-	-	5.4	220	1188	65	0,78
Supply circuit #5 (X7-9, 3)	-	-	-	-	-	12.4	220	2728	1.2	0.1
Signal circuit #3 (X7-5 to 8)	15	500	2480	0	0	5.88	56	82	43	16


HAZARDOUS CASSIFIED LOCATION Class I; Division I; Groups A, B, C, D
Class I; Zone 0
NONHAZARDOUS LOCATION
OPERATOR INTERFACE
TYPE ET-65 (-75, -125) -RS422-WCR1
Cable length max. 6.5 ft. (2m)
Switches SW1 to SW8:
Simple Apparatus - Contact switches not generating more than 1,5V, 100mA, 25mW or passive components that does not dissipate more than 1,3W.
Terminal Power Supply Circuit #1
Backlight Power Supply Circuit #2
Signal Circuit #2
Communication Signal Circuit #1
Reader Power Supply Circuit #4
Reader Signal Signal Circuit #3
Reader Interface Power out Supply Circuit #5
EARTH GROUND
Reader
FM Approved Apparatus for the Entity Concept
Power supply FM Approved Associated Apparatus
Communication Unit
Type: 9185/11-ab-10 or 9185/12-ab-10 (R.STAHL Schaltgeräte GmbH)
FM Approved Associated Apparatus for the Entity Concept (Project ID: 30171145)
OPERATOR INTERFACE TYPE ET-65, -75, -125-a-b
#2 FM Approved Apparatus for the Entity Concept
#8 FM Approved Apparatus for the Entity Concept
Up to 8 Operator Interfaces can be linked by RS-422 Interface
Notes:
1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved.
3. The FM Approved Associated Apparatus must be a linear output device.
4. Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
5. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
6. The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:
Vmax or Ui ≥ Voc, Vt or Uo;
Imax or Ii ≥ Isc, It or Io;
Pmax or Pi ≥ Po;
Ca or Ci + Cable;
La or Li + Cable;
7. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
8. Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
9. The associated apparatus must be a passively limited single or multiple channel FM Approved barrier having parameters less than those quoted, and for which the output and the combinations of outputs is non-ignition capable for the Class, Division and Group of use.
WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Entity Parameters:
Switches SW1 to SW8
Control Drawing
OPERATOR INTERFACE EXICOM ET-65 (-75, -125) -RS422-WCR1
Reader at X7 not powered by Operator Interface.
Agency FM
Drawing number 2004 40 51 0
Sheet 4 of 5
R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D - 50767 Köln
Tel.: +49 (0)221/59808200
Fax.: +49 (0)221/59808260
Modification/Name Date checked
drawn Feb. 16, 2005 Bartosik
checked Feb. 16, 2005 Gruner
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Circuit (Terminals)	Ui (V)	Ii (mA)	Pi (mW)	Ci (µF)	Li (mH)	Uo (V)	Io (mA)	Po (mW)	Co (µF)	Lo (mH)
Supply circuit #1 (X1-1, 2)	12.4	200	2480	0	0	-	-	-	-	-
Supply circuit #2 (X1-3, 4)	12.4	200	2480	0	0	-	-	-	-	-
Signal circuit #1 (X2-1 to 4)	8	370	550	0	0	5.88	40	59	43	30
Signal circuit #2 (X5-1 to 9)	Int. Safe connections for passive switches. Max. cable length 6.5ft.(2m)					5.88	40	59	13	30
Signal circuit #3 (X7-5 to 8)	15	500	2480	0	0	5.88	56	82	43	16

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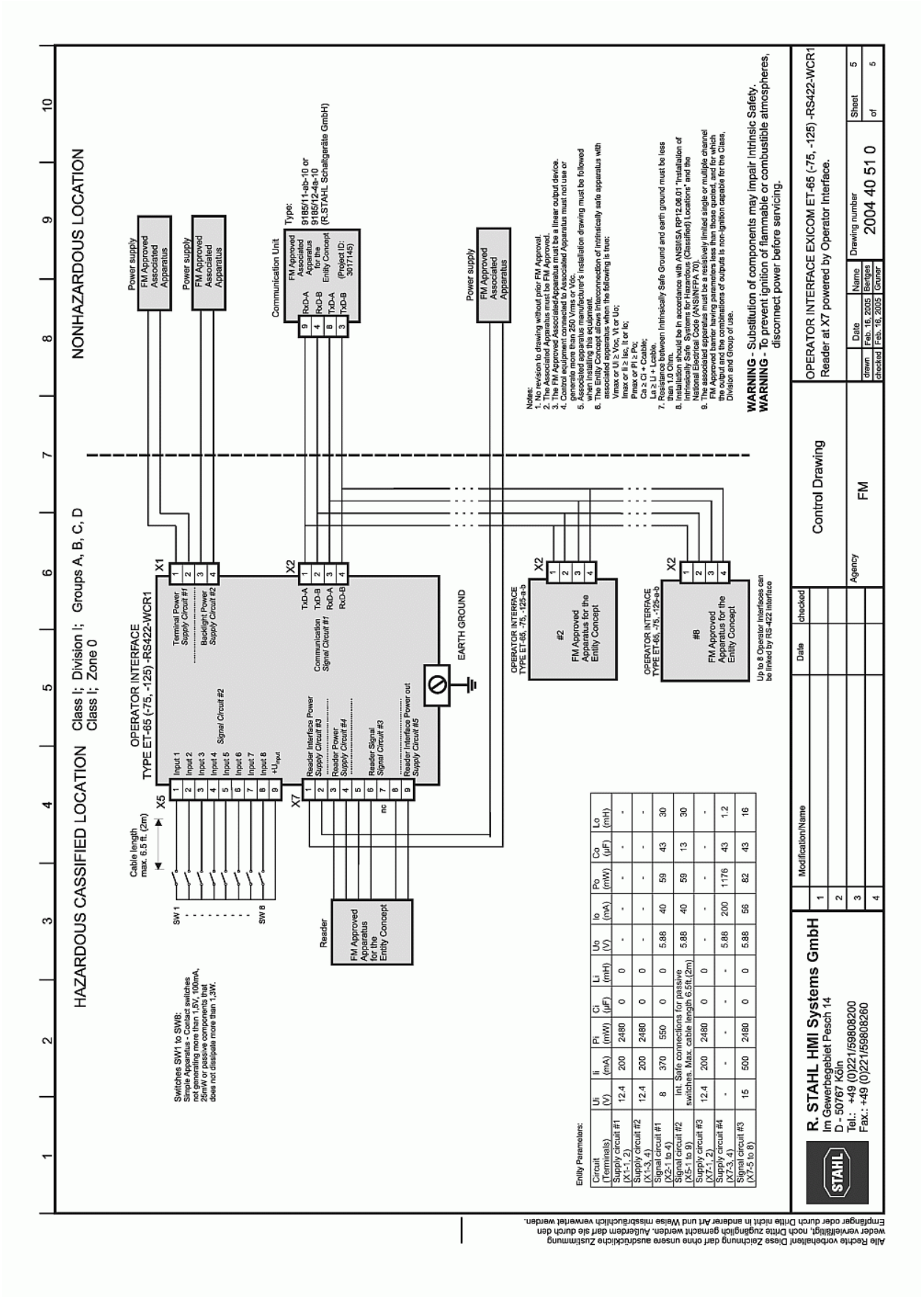
HAZARDOUS CASSIFIED LOCATION Class I; Division I; Groups A, B, C, D
Class I; Zone 0
NONHAZARDOUS LOCATION
OPERATOR INTERFACE
TYPE ET-65 (-75, -125) -RS422-WCR1
Cable length max. 6.5 ft. (2m)
Switches SW1 to SW8:
Simple Apparatus - Contact switches not generating more than 1,5V, 100mA, 25mW or passive components that does not dissipate more than 1,3W.
Reader
FM Approved Apparatus for the Entity Concept
Power supply
FM Approved Associated Apparatus
Communication Unit
Type: 9185/11-ab-10 or 9185/12-4b-10 (R.STAHL Schaltgeräte GmbH)
FM Approved Associated Apparatus for the Entity Concept
(Project ID: 30171145)
EARTH GROUND
OPERATOR INTERFACE TYPE ET-65, -75, -125-a-b
#2
#8
Up to 8 Operator Interfaces can be linked by RS-422 Interface
Notes:
1. No revision to drawing without prior FM Approval.
2. The Associated Apparatus must be FM Approved.
3. The FM Approved Associated Apparatus must be a linear output device.
4. Control equipment connected to Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
5. Associated apparatus manufacturer's installation drawing must be followed when installing this equipment.
6. The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus when the following is true:
Vmax or Ui ≥ Voc, Vt or Uo;
Imax or Ii ≥ Isc, It or Io;
Pmax or Pi ≥ Po;
Ca or Ci + Ccable;
La or Li + Lcable;
7. Resistance between Intrinsically Safe Ground and earth ground must be less than 1.0 Ohm.
8. Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the National Electrical Code (ANSI/NFPA 70).
9. The Associated Apparatus must be a passive or actively limited single or multiple channel FM Approved barrier having parameters less than those quoted, and for which the output and the combinations of outputs is non-ignition capable for the Class, Division and Group of use.
WARNING - Substitution of components may impair Intrinsic Safety.
WARNING - To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
Entity Parameters:
Circuit (Terminals) | Ui (V) | Ii (mA) | Pi (mW) | Ci (µF) | Li (mH) | Uo (V) | Io (mA) | Po (mW) | Co (µF) | Lo (mH)
Supply circuit #1 (X1-1, 2) | 12.4 | 200 | 2480 | 0 | 0 | - | - | - | - | -
Supply circuit #2 (X1-3, 4) | 12.4 | 200 | 2480 | 0 | 0 | - | - | - | - | -
Signal circuit #1 (X2-1 to 4) | 8 | 370 | 550 | 0 | 0 | 5.88 | 40 | 59 | 43 | 30
Signal circuit #2 (X5-1 to 9) | Int. Safe connections for passive switches. Max. cable length 6.5ft.(2m) | | | | | 5.88 | 40 | 59 | 13 | 30
Supply circuit #3 (X7-1, 2) | 12.4 | 200 | 2480 | 0 | 0 | - | - | - | - | -
Supply circuit #4 (X7-3, 4) | - | - | - | - | - | 5.88 | 200 | 1176 | 43 | 1.2
Signal circuit #3 (X7-5 to 8) | 15 | 500 | 2480 | 0 | 0 | 5.88 | 56 | 82 | 43 | 16
R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D - 50767 Köln
Tel.: +49 (0)221/59808200
Fax.: +49 (0)221/59808260
Modification/Name | Date | checked
Control Drawing
Agency FM
OPERATOR INTERFACE EXICOM ET-65 (-75, -125) -RS422-WCR1
Reader at X7 powered by Operator Interface.
Date | Name
drawn | Feb. 16, 2005 | Bertges
checked | Feb. 18, 2005 | Gruner
Drawing number 2004 40 51 0
Sheet 5
of 5
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14.1.4 GL certificate

Type Approval Certificate

Germanischer Lloyd

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No.	26 032 - 05 HH
Company	R. Stahl HMI Systems GmbH Im Gewerbegebiet Pesch 14 D-50767 Köln
Product Description	Exicom intrinsically safe Operator Interface; Power Supply; Fieldbus Bridge
Type	Exicom Operator Interface ET-125, ET-75, ET-65 with GL-Kit Power Supply 9143/10-xxx-xxx-x0; Fieldbus Isolating Repeater 9185/11-46-10
Environmental Category	C, EMC 2
Technical Data / Range of Application	Exicom Operator Interface:

Type	Display size	Resolution	number of keys
ET-125	114mmx64mm	240x128 Pixel	47
ET-75	114mmx64mm	240x128 Pixel	31
ET-65	134mmx40,4mm	240x 64 Pixel	43

	Inputs	Communication
all Types:	8 binary, 3.3V/2mA	RS-422, connected to Fieldbus Bridge 9185/11-46-10

Software: Application version 4.xx; Driver version 1.xx; Boot version 2.xx
Requirement class 3

protection class (according to Atex 94/9/EC): II 2G EEx ia IIC/IIB T4/T3

(see page 2 for further details)

Test Standard	Guidelines for the Performance of Type Approvals, Chapter 2 - Edition 2003
Documents	Test reports : No. E50252 and U 50252 (Phoenix Testlab); 21110637_001 (TÜV) No. 20035102 (SAE STAHL GmbH) Ex-Certificates: DMT 02 ATEX E 246 X; BVS 03 ATEX E 226; BVS 03 ATEX E314 Technical Documentation: Data sheets, Circuit Diagrams, Layouts, Manuals
Remarks	None
Valid until	2010-04-26

Page 1 of 2 Type Approval Symbol GL

File No. I.B.06

Hamburg, 2005-04-27

Germanischer Lloyd J. Wittburg D. Lesniewski

This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".

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Type Approval Certificate

Germanischer Lloyd

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. **26 032 - 05 HH**

(Technical Data / Range of Application continued)

Power supply unit 9143/10-xxx-xxx-x0 (Manufacturer: R. STAHL Schaltgeräte GmbH):
rated current and voltage according to data sheet
protection class (according to Atex 94/9/EC): II (2) G [EEx ib] IIC/IIB

Fieldbus Isolating Repeater 9185/11-46-10 (Manufacturer: R. STAHL Schaltgeräte GmbH):
Interfaces: 1 x RS 422 for communication with Operator Interface (intrinsically safe)
1 x RS-232-C
1 x Profibus-DP
protection class (according to Atex 94/9/EC): II (2) GD [EEx ib] IIC/IIB

GL-Kit:
stainless steel housing No. 8125

Degree of protection: IP 65 (ET-65/-75/-125)

Valid until **2010-04-26**

Page **2** of **2**

Type Approval Symbol GL

File No. **I.B.06**

Hamburg, 2005-04-27

Germanischer Lloyd J. Wittburg D. Lesniewski

This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".

14.1.5 UL Inmetro

Notice:
The complete certificate can be downloaded from R. STAHL HMI Systems GmbH's website at www.stahl-hmi.de.

U L d o B r a s i l C e r t i f i c a ç õ e s

Solicitante
113899-001

Instrumentos Lince Ltda.
Rua Luiz Ferreira, 84
21042-210 - Rio de Janeiro - RJ
CNPJ: 29.359.171/0001-93

Fabricante
100041-435

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D-50767 Köln (Cologne) Germany

Este certificado aplica-se ao(s) produto(s) abaixo relacionado(s), estando o(s) mesmo(s) descrito(s) no Apêndice a este Certificado e nos documentos nele relacionados.

TERMINAL PARA ATMOSFERAS EXPLOSIVAS.

Modelo/Tipo: **ET- . . . - RS422 - . . .**

UL do Brasil Certificações sendo um Organismo de Certificação de Produto, credenciado pelo INMETRO segundo o registro No.: OCP-0029 confirma que o produto está em conformidade com a(s) seguinte(s) Norma(s): **IEC 60079-0:1998; IEC 60079-11:1999 e IEC 60529:2001.**

Marcação básica do produto: **BR-Ex ia IIC/IIB T4/T3 IP 65**

T4 para T_{amb} = -25ºC a +60ºC

T3 para T_{amb} = -25ºC a +70ºC

Número do Relatório de Avaliação e Ensaio: **BR1048/Volume 7/ Seção 1/2005.**

A empresa licenciada, responsável pelo produto referenciado neste certificado, tem a responsabilidade de garantir que o produto está em conformidade com as especificações descritas no Apêndice a este certificado e que a mesma executa as verificações e ensaios de rotina aplicáveis.

De acordo com a Portaria nº 176/2000 e Regra Específica NIE-DQUAL-096 Rev. 00 do INMETRO, a empresa licenciada está autorizada a ostentar a Marca de Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.

Emissão: 03 de novembro de 2005.
Revisão: ---------
Validade: 02 de novembro de 2007.

Pela UL do Brasil Certificações

Marco Antonio Bucciarelli Roque
Presidente

INMETRO BR OCP-0029

Esta licença acompanhada de seu apêndice está vinculada a um contrato e ao(s) endereço(s) acima citado(s).
Este Certificado só é válido acompanhado de seu Apêndice.

U L DO BRASIL CERTIFICAÇÕES
Rua Fidêncio Ramos, 195 – 5 andar
04551-010 Vila Olímpia – São Paulo – SP – Brasil
CNPJ: 04.830.102/0001-95

BS-F-026-CF
Rev.: 9

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14.1.6 DNV Certificate

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-11821**

This is to certify that the
Peripheral Equipment

with type designation(s)
Exicom Terminals ET-125-RS422, ET-75-RS422, ET-65-RS422

Manufactured by
R. Stahl HMI Systems GmbH
KÖLN, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application
Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**B**

Høvik, 2010-06-08
for **Det Norske Veritas AS**

Odd Magne Nesvåg
Head of Section

DNV local office:
Essen

This Certificate is valid until
2012-12-31

Jan Aksel Nilsen
Surveyor

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS AS, Veritasveien 1, NO-1322 Høvik, Norway, Tel.: +47 67 57 99 00, Fax: +47 67 57 99 11, Org.No. NO 945 748 931 MVA www.dnv.com
Form No.: TA 1411a Issue: October 2009
Page 1 of 3

Certificate No.: A-11821
File No.: 899.60
Job Id.: 262.1-001294-3

Product description

Exicom operating terminal units covering:
Exicom Terminal ET-125-RS422, ET-75-RS422, ET-65-RS422 (Köln)
Exicom I.S. Fieldbus Bridge 9185 (Waldenburg)
Exicom I.S. Power Supply 9143 (Manufacture: Köln, Final test: Waldenburg).

Place of Manufacture

R.Stahl Schaltgerätebau GmbH, Waldenburg, Germany
R.Stahl HMI Systems GmbH, Köln, Germany

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Test Report No.: E50252 by Phoenix Testlab GmbH, Blomberg, issued 07.04.2005
Test Report No.: 60546 by Phoenix Testlab GmbH, Blomberg, issued 05 April 2006
Hardwaremanual "Exicom ET-65/ ET-75/ ET-125" version 1.1 by R. Stahl HMI Systems GmbH, Köln, issued 20.05.2005
Operating instructions "Exicom Falcon ET-65, ET-75, ET-125, I.S. power supply 9143, Fieldbus Isolator 9185, MCRi-HID-Swipe magnetic card reader" version 2.5 issued 16.03.2006.
Operating instructions "Fieldbus-Bridge Typ/Type 9185/11-46-10, Typ/Type 9185/12-46-10 " not dated.
Booklet "Approval Documents for 9185/11-46-10 DMT 02 ATEX E 246 X" by R. Stahl HMI Systems GmbH, Köln, not dated. (Included certificate DMT 02 ATEX E 246 X dated 05.12.2002)
Booklet "Approval Documents for 9143/10-***-***-10 BVS 05 ATEX E 152 X" by R. Stahl HMI Systems GmbH, Köln, not dated. (Included certificate BVS 05 ATEX E 152 X dated 10.10.2005)
Booklet "Approval Documents for ET-65, ET-75, ET-125 BVS 03 ATEX E 226" by R. Stahl HMI Systems GmbH, Köln, not dated. (Included certificate BVS 03 ATEX E 226 dated 16.09.2003)
Test report No.: 21110637_001 by TÜV Rheinland Product Safety GmbH, issued 2003-12-09.
Test Report No.: U61243 by Phoenix Testlab GmbH, Blomberg, issued 07 July 2006
Retention Survey Report, TAC no.:A10050, dated 2008-08-26
Retention Survey Report A-10960, dated 2010-05-05

Tests carried out

Applicable tests according to Standard for Certification 2.4.

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Certificate No.: A-11821
File No.: 899.60
Job Id.: 262.1-001294-3

Certificate Retention Survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the survey are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE

DET NORSKE VERITAS AS, Veritasveien 1, NO-1322 Høvik, Norway, Tel.: +47 67 57 99 00, Fax: +47 67 57 99 11, Org.No. NO 945 748 931 MVA www.dnv.com

14.2 WCRi-HID-Swipe-magnetic card reader

14.2.1 Declaration of EC conformity

EG - Konformitätserklärung
EC - Declaration of Conformity
CE - Déclaration de Conformité

Wir/ *We* /Nous

R. STAHL HMI Systems GmbH
Im Gewerbegebiet Pesch 14
D-50767 Köln

erklären in alleiniger Verantwortung, dass unser Produkt
declare under our sole responsibility that the product
attestons sous notre responsabilité que le produit

MCRi - Wiegand

gekennzeichnet:
marked:
marqué: II 2G EEx ib IIC T4/T3

auf welches sich diese Erklärung bezieht, mit der /den folgenden Norm(en) oder normativen Dokumenten übereinstimmt:
which is the subject of this declaration, is in conformity with the following standard(s) or normative documents:
auquel cette déclaration se rapporte, est conforme aux norme(s) ou aux documents normatifs suivants:

Bestimmung der Richtlinie *Terms of the directive* Prescription de la directive	**Titel und/oder Nr. sowie Ausgabedatum der Norm** *Title and/or No. and date of issue of the standard* Titre et/ou No. ainsi que date d'émission des normes
94/9/EG : Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen *94/9/EC: Equipment and protective systems intended for use in potentially explosive atmospheres* 94/9/CE: Appareils et systèmes de protection destinés á être utilisés en atmosphères explosibles	EN 60079-0 : 2004 EN 50020 : 2002
2004/108/EG : **Elektromagnetische Verträglichkeit** *2004/108/EC: Electromagnetic compatibility* 2004/108/CE: Compatibilité electromagnétique	EN55022 (Class B) + A1:2001 + A2:2003 EN 61326 :2006

Köln, den 25.06.2009
Ort und Datum
Place and date
lieu et date

Joachim Düren
Technical Director

Horst Friedrich
Product Manager

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14.2.2 EC type examination certificate

EXAM
BBG Prüf- und Zertifizier GmbH

Translation

(1) **EC-Type Examination Certificate**

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) **BVS 04 ATEX E 092**

(4) **Equipment:** **Reader type EXICOM WiegandMCR**

(5) **Manufacturer:** **SAE-STAHL GMBH**

(6) **Address:** **D 50767 Köln**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 04.2066 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:
EN 50014:1997+A1-A2 General requirements
EN 50020:2002 Intrinsic safety 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 2G EEx ib IIC T4/T3

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 04. May 2004

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services

This certificate may only be reproduced in its entirety and without change
Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 201 172-3947 Fax +49 201 172-3948
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

15 Release Notes

Starting with version 2.14 of these Operating Instruction, the chapter "Release Notes" has been added. This chapter details every change made in each new version of the Operating Instructions.

Version 2.14

- Change of the ATEX classification of the operator interfaces
- 3rd supplement of the EC-type examination certificate
- Update of the declaration of conformity
- Update of the conformity of standards
- Change / update of the type code
- Addition of / change to information concerning BGI 547 (Information on and principles of workplace safety and health issued by the Government Safety Association).
- General stylistic and layout improvements

Version 2.15

- Explosion and safety-relevant information on 9143 and 9185 were taken out
- Certificates and declarations of conformity for 9143 and 9185 were taken out

Version 2.16

Version not released.

- Update of the declaration of conformity
- Section 3.3 Conformity to standards moved into section 3.2
- Update of the conformity of standarts
- New addition of section 3.3, certifications
- Addition of product identification (section 3.4) with DNV and GOST-R
- Update of the DNV certification
- Update of the GOST-R certification
- General stylistic and layout improvements
- Rename UL Brasil into UL Inmetro
- Rename MCRi into WCRi

Version 02.02.17

- New definition of version and document name
- Addition of section 3.3.1 range of validity of approvals for the operator interfaces
- Update of the declaration of conformity MCRi-Wiegand

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Version 02.02.18

- New format of chapter headings
- New format of table of contents
- Changes to preface with comment on other operating instructions
- Changes to chapter 2 "safety information"
- Editing / expansion of Technical Data for Falcon operator interfaces, now in table layout
- Changes of conformity to standards
- Changes to chapter 3.5 "Product identification"
- Addition of chapter 3.7 " Permitted maximum values"
- Renew chapter 3.8 "Type code"
- Renew chapter 3.9 "Special conditions"
- Renew chapter 3.10 "Safty advice"
- Addition of chapter 9.2.2 "Assembly of ET-xxx"
- Reconstruction chapter 9 "Assembly, Disassembly"
- Renew chapter 10.1 "Connections", only actual connections listed
- Addition of information on BetrSichVer (German Works Safety Regulations)
- Changes to chapter 11 "Maintenance, service"
- Inclusion of comment on certificates
- Reduction of the Falcon certificates to the first page of the EC type examination certificate and the first page of the most recent supplement
- Reduction of the Wiegand card reader certificates to the first page of the EC type examination certificate
- Removing FM control drawings
- Inclusion of the new DNV certificate
- Stylistic changes

Version 02.02.19

- FM control drawings again inserted

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